In the Claims:

Claims 13-20 stand withdrawn from consideration.

Please amend claims 2, and 3 and add new claims 21-24 as follows:

1. (canceled)

2. (currently amended) A dielectric sensing method for detection and classification of chemical and biological materials comprising the steps of:

providing a resonator for receiving a sample;

detecting resonance patterns and identifying a shift in resonance frequency and a change of line width before and after introduction of the sample into said resonator including the steps of ~~selectively~~ generating said resonance patterns ~~either~~ as a function of sample concentration ~~or as a function of excitation frequency~~ for a given sample by selectively varying sample concentrations for a plurality of tests;

using said identified shift in resonance frequency and said change of line width for determining a complex dielectric constant of the sample for the material detection and classification of the sample; and

using said generated resonance patterns for real-time identifying chemical and biological materials of the sample.

3. (currently amended) A dielectric sensing method for detection and classification of chemical and biological materials as recited in claim 2 further includes generating said resonance patterns as a function of excitation frequency for a given sample and wherein the step of providing said resonator for receiving said sample includes the step of providing a microwave cavity resonator for receiving gas and solids